IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Previously Presented): A time-of-flight range-finding sensor for range-finding by reading a signal, which depends on a delay time of repetitive light pluses transmitted from a light source and then reflected by a target object to be measured, the time-of-flight range-finding sensor comprising:

a p-type semiconductor substrate having a p-type photodetector layer and a p-type well formed at a surface of the semiconductor substrate so as to encircle the photodetector layer in a plan view, the p-type well having a higher concentration than the semiconductor substrate;

an insulator layer formed on the photodetector layer;

two conductive photo-gate electrodes provided on the insulator layer above the photodetector layer, adjacently disposed so as to define a gap between the two photo-gate electrodes, and being transparent for a wavelength of a light reflected by the target object; and

two MOS transistors formed in the p-type well so as to sandwich the photo-gate electrodes, each of the MOS transistors having an n-type floating diffusion layer serving as a source region, which is disposed at a boundary between the photodetector layer and the p-type well and configured to extract charges from the photodetector layer,

wherein a uniform optical path exists along the full-width of the gap.

Claim 2 (Previously Presented): The time-of-flight range-finding sensor according to Claim 1, wherein each of two photo-gate electrodes has a comb-shaped geometry having a plurality of projections in a plan view, the projections of one of the photo-gate electrodes are inserted interdigitally between the projections of the other photo-gate electrode.

Claim 3 (Canceled).

Claim 4 (Previously Presented): The time-of-flight range-finding sensor according to Claim 1, further comprising signal-extraction MOS transistors, wherein each of the two MOS transistors further comprises:

a second floating diffusion layer serving as a drain, being connected to a gate electrode of one of the signal-extraction MOS transistors; and

a gate electrode to be applied with gate voltage, being controlled so as to electrically separate the first floating diffusion layer from the second floating diffusion layer configured to allow storage of an analog signal.

Claim 5 (Previously Presented): The time-of-flight range-finding sensor according to Claim 1, wherein the insulator layer utilizes a field oxide being formed in a manufacturing procedure of a CMOS integrated circuit.

Claim 6 (Currently Amended): The time-of-flight range-finding sensor according to Claim 1, further comprising two diffusion layers provided under the insulator layer, between the photodetector layer and the n-type floating diffusion layers, being doped with impurity atoms having the same polarity as [[the]] impurity atoms of the ~~first~~ n-type floating diffusion layers.

Claim 7 (Previously Presented): The time-of-flight range-finding sensor according to Claim 1, wherein the photo-gate electrodes are made of polysilicon, which is the same material as the gate electrode of a MOS transistor in a CMOS integrated circuit, or

polysilicon and silicide formed on the polysilicon, the silicide being treated so as to increase optical transmissivity.

Claim 8 (Previously Presented): The time-of-flight range-finding sensor according to Claim 1, wherein the photodetector layer utilizes the p-type semiconductor substrate, such that both a p-type well and an n-type well are not formed in the photodetector layer.

Claim 9 (Previously Presented): The time-of-flight range-finding sensor according to Claim 1, wherein the photodetector layer utilizes a low concentration n-type semiconductor substrate, such that both a p-type well and an n-type well are not formed in the photodetector layer.

Claim 10 (Previously Presented): The time-of-flight range-finding sensor according to Claim 1, wherein a plurality of unit structures, each of which comprising the photo-gate electrodes, the photodetector layer, and the n-type floating diffusion layers, are arranged one-dimensionally or two-dimensionally so as to generate an image representing a range distribution.

Claim 11 (Previously Presented): The time-of-flight range-finding sensor according to Claim 1, further comprising a light beam scanner configured to generate incident beams into the range-finding sensor from a two-dimensional plane so as to generate an image representing a range distribution.

Claim 12 (Previously Presented): The time-of-flight range-finding sensor according to Claim 1, wherein range information is obtained from the ratio of two signals taken out

respectively from the photo-gate electrodes, while intensity information is obtained from the sum of the two signals.

Claim 13 (Canceled).